

REMARKS

I. Status of the Application

By the present Amendment, Applicants are amending claims 4 and 21. No new matter is added. Further, Applicants are canceling claim 16 without prejudice or disclaimer.

Accordingly, claims 1, 3-15, 17, 18, 21, and 22 are all the claims currently pending in the application. Claims 1, 10-13, and 17 have been rejected. Claims 3-9, 14-16, 18, 21, and 22 have been withdrawn. The present Amendment addresses each point of rejection raised by the Examiner. Favorable reconsideration is respectfully requested.

II. Election of Species

In the Response to the Election of Species Requirement of February 2, 2009, the Applicants elected Species I (Fig. 10), upon which claims 1, 10-13, 17, and 21 are readable. However, the Examiner maintains that claim 21 is not readable on Species I (Fig. 10), and is instead readable on Species III (Fig. 5). Accordingly, the Examiner has not examined claim 21 in the present Office Action.

Claim 21 previously recited that “said optical unit is a lenticular lens in which a plurality of cylindrical lenses is arranged in the horizontal direction, said cylindrical lenses being disposed in each line in which said pixel sections extend in the vertical direction corresponding to the longitudinal direction of said cylindrical lens” (emphasis added). The Examiner maintains that the emphasized feature cannot be found in Fig. 10. In order to improve clarity, Applicants are amending claim 21 to recite that “a plurality of cylindrical lenses is arranged such that a geometric axis of each cylindrical lens is substantially aligned with a space between the first pixel and the second pixel of at least one pixel section, and the geometric axis of said cylindrical lens extends along said vertical direction.” This is similar to the formulation recited in claim 1,

and is readable on Species I (Fig. 10). Applicants respectfully request that the Examiner examine claim 21 along with the other claims that read on Species I (Fig. 10).¹

III. Information Disclosure Statement

The Examiner has not considered the references submitted in the Information Disclosure Statement (IDS) of December 22, 2008 because the IDS allegedly fails to comply with 37 C.F.R. § 1.98(a)(1). Applicants respectfully disagree. The Examiner has crossed out and refused to consider the references that are listed in narrative form on the first page of the IDS. However, Applicants also submitted a modified PTO/SB/08 Form that lists the references to be considered in a proper format that complies with the requirements of 37 C.F.R. § 1.98(a)(1).

In a telephone conversation on June 1, 2009, the Examiner stated that he had not received the third page of the IDS, which includes the modified PTO/SB/08 Form. In response to the Examiner's request, Applicants are submitting herewith another copy of the modified PTO/SB/08 Form for the Examiner's review. Applicants respectfully request that the Examiner indicate consideration of the references by returning the signed and initialed PTO/SB/08 Form with the next Office Action.

IV. Objection to the Drawings

The Examiner has objected to the drawings because they allegedly fail to show "said second pixel being disposed at a position apart from said first pixel in a horizontal direction," as recited in claim 21. Applicants respectfully disagree. Fig. 10 shows that the pixel (44) for the right eye is disposed at a position apart from the pixel (43) for the left eye along the array

¹ As discussed in the Statement of Substance of Interview below, the Examiner agreed to rejoin claim 21 by virtue of the present Amendment.

direction (12) of the cylindrical lens (3a) (page 25, line 23 - page 27, line 28). Fig. 11 shows that the array direction (12) of the cylindrical lens (3a) may be the horizontal direction of the display plane (page 27, lines 16-28). Therefore, the combination of Figs. 10 and 11 clearly shows the claim feature quoted above. Applicants respectfully request that the Examiner withdraw the objection to the drawings.

V. Claim Rejections Under 35 U.S.C. § 103(a)

Claims 1, 10, and 12 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over the alleged admitted prior art (AAPA) in view of U.S. Patent No. 6,909,479 to Iijima. Claims 11 and 13 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over the AAPA in view of Iijima and U.S. Patent No. 6,603,504 to Son et al. (hereinafter “Son”). Claim 17 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over the AAPA in view of Iijima and U.S. Publication No. 2003/0117551 to Fujimori et al. (hereinafter “Fujimori”). Applicants respectfully traverse these grounds of rejection as follows.

Preliminarily, Applicants note that the rejection of claim 12 over the AAPA in view of Iijima is inconsistent with the rejection of claim 11 over the AAPA in view of Iijima and Son. Because claim 12 depends from claim 11, claim 12 must also be rejected over the AAPA in view of Iijima and Son. In a telephone conversation on June 1, 2009, the Examiner agreed that claim 12 should have been rejected over the AAPA in view of Iijima and Son. Therefore, Applicants respectfully request that the Examiner correct this error in the next Office Action.

Claim 1 recites an image display device comprising a display panel with a plurality of pixel sections. Each pixel section includes a first pixel and a second pixel, in which the second pixel is spaced apart from the first pixel in a first direction. Each of the first and second pixels

includes a transmissive region and a reflective region. The transmissive regions are arranged in a line in the first direction, and the reflective regions are also arranged in a line in the first direction. Lines of the transmissive regions alternate with lines of the reflective regions in a second direction that is perpendicular to the first direction. The image display device also includes a plurality of cylindrical lenses that are arranged “such that a geometric axis of each cylindrical lens is substantially aligned with a space between the first pixel and the second pixel of at least one pixel section, and the geometric axis of said cylindrical lens extends along said second direction.”

Accordingly, claim 1 recites that the geometric axis of each cylindrical lens extends along the same direction in which the lines of the transmissive regions alternate with the lines of the reflective regions (i.e. the second direction). In contrast, as shown in Fig. 6, the geometric axis of the cylindrical lens (3a) of the AAPA extends in a direction that is perpendicular to the direction along which the transmissive regions (410, 430) alternate with the reflective regions (420, 440) (page 11, lines 18-27).

In rejecting claim 1, the Examiner acknowledges that the AAPA fails to disclose that the transmissive regions are arranged in a line in the first direction (along which the first pixel and the second pixel are spaced), the reflective regions are arranged in a line in the first direction, and lines of the transmissive regions and lines of the reflective regions alternate repeatedly in the second direction (along which the geometric axis of the cylindrical lens extends). However, the Examiner maintains that Iijima discloses these features, and that it would have been obvious to a person of ordinary skill in the art to modify the AAPA with the pixel sections of Iijima in order to improve the quality of the image being displayed on the screen of the LCD panel. Applicants respectfully disagree.

Iijima discloses a transreflective liquid crystal display (col. 1, lines 10-12). As shown in Fig. 3 of Iijima, each pixel (615) includes three sub-pixels (551R, 551G, 551B) (col. 13, lines 29-37). Each sub-pixel of Iijima includes a reflective layer (521/525) that reflects light, and an opening portion (521a) through which light is transmitted (col. 12, lines 8-17).² However, Iijima is silent regarding the relationship of the direction along with the transmissive and reflective regions alternate and the direction of the geometric axis of the cylindrical lens. On the contrary, the transreflective liquid crystal display of Iijima does not include the recited cylindrical lens. Because the transreflective liquid crystal display of Iijima is not related to binocular vision, it does not include any optical elements (i.e. lenses), and therefore cannot teach or suggest the claimed relationship between the direction along with the transmissive and reflective regions alternate and the direction of the geometric axis of the cylindrical lens.

In addition, Applicants submit that it would not have been obvious to modify the AAPA such that the geometric axis of each cylindrical lens extends along the same direction in which the lines of the transmissive regions alternate with the lines of the reflective regions based on the teachings of the cited references. As described in the original specification, the AAPA is directed to a three-dimensional image display device that uses binocular vision (page 1, line 17 - page 2, line 2). As discussed above, because the transreflective liquid crystal display of Iijima is not related to binocular vision, it does not include any optical elements (i.e. lenses). Also, as shown in Fig. 3 of Iijima, within each sub-pixel (551R, 551G, 551B) of the transreflective liquid crystal display, the transmissive region (521a) is surrounded by the reflective region (521/525),

² Applicants note that the Examiner appears to misinterpret the reflective regions (521) as being transmissive and the transmissive regions (521a) as being reflective.

and the size of the transmissive region (521a) is different for each color (R, G, B). Therefore, the visible range of binocular vision would be different for each color (R, G, B) in Iijima, such that a three-dimensional image would not be properly formed. Accordingly, Applicants submit that a person of ordinary skill in the art would not have modified the AAPA to incorporate the pixel sections of Iijima for the reasons discussed above.

Applicants submit that claim 1 is patentable over the alleged combination of the AAPA and Iijima for at least the reasons discussed above, as well as its additionally recited features. Because claim 21 recites features similar to those discussed above with regard to claim 1, Applicants submit that claim 21 is patentable over the AAPA and Iijima at least for similar reasons, as well as its additionally recited features.

Further, Son and Fujimori fail to remedy the deficient teachings of the AAPA and Iijima. For example, because Son does not disclose transmissive and reflective regions, Son cannot teach or suggest the claimed relationship of the direction along with the transmissive and reflective regions alternate and the direction of the geometric axis of the cylindrical lens. Also, because Fujimori does not include a lens, Fujimori cannot teach or suggest the claimed relationship of the direction along with the transmissive and reflective regions alternate and the direction of the geometric axis of the cylindrical lens. Therefore, claims 10-13 and 17 are patentable over the AAPA, Iijima, Son, and Fujimori at least by virtue of their dependencies on claim 1, as well as their additionally recited features.

VI. Statement of Substance of Interview

An Examiner's Interview Summary Record (PTO-413) was faxed to Applicant's undersigned representative on July 23, 2009. A telephonic interview was conducted on July 23, 2009 between the Applicant's undersigned representative and Examiner Kevin Nguyen. During the telephonic interview, the Applicant's undersigned representative discussed the arguments presented above regarding the patentability of claim 1 over the cited references. The Examiner agreed that the cited references fail to teach or suggest that the geometric axis of each cylindrical lens extends in the same direction along which the lines of the transmissive regions alternate with the lines of the reflective regions, as recited in independent claims 1 and 21. Similarly, the Examiner agreed that the cited references fail to teach or suggest that the longitudinal direction of each slit extends in the same direction along which the lines of the transmissive regions alternate with the lines of the reflective regions, as recited in independent claims 3 and 4. Further, the Examiner indicated that withdrawn claims 3, 4, and 21 would be rejoined and allowed by virtue of these claim features. Applicant respectfully requests rejoinder of independent claims 3, 4, and 21, along with dependent claims 5-9, 14, 15, 18, and 22.

It is respectfully submitted that the instant STATEMENT OF SUBSTANCE OF INTERVIEW complies with the requirements of 37 C.F.R. §§1.2 and 1.133 and MPEP §713.04.

VII. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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